AMENDMENTS TO THE CLAIMS

1. **(Currently Amended)** A method for detection of bone fractures using image processing of a ~~digitised~~ digitized x-ray image, the method comprising; ~~wherein the image processing comprises~~:

~~an adaptive sampling scheme~~ extracting a contour of a bone in the digitized x-ray image;

identifying a bounding box around an area of interest based on the extracted contour of the bone; and

applying an adaptive sampling scheme in which the bounding box is divided into a predetermined number of sampling points of a normalized sampling grid such that sampling locations in different images correspond to consistent locations within the area of interest.

2. **(Canceled)**

3. **(Currently Amended)** The method as claimed in claim [[2]] 1, wherein the extracting of the contour of the bone in the ~~digitised~~ digitized x-ray image comprises applying a Canny edge detector to the ~~digitised~~ digitized x-ray image.

4. **(Currently Amended)** The method as claimed in claims [[2]] 1, wherein the extracting of the contour of the bone in the digitized x-ray image comprises applying a snake algorithm to the ~~digitised~~ digitized x-ray image.

5. **(Currently Amended)** The method as claimed in claim 4, wherein applying the snake algorithm to the ~~digitised~~ digitized x-ray image comprises creating a Gradient Vector Flow (GVF).

6. **(Canceled)**

7. **(Canceled)**

8. **(Currently Amended)** The method as claimed in claim [[7]] 1, wherein a sampling region around the sampling points is chosen to cover image pixel points between the sampling points.

9. **(Currently Amended)** The method as claimed in claim 1, wherein the ~~image processing~~ method further comprises calculating one or more texture maps of the ~~digitised~~ digitized x-ray image and detecting a bone fracture based on respective reference texture maps.

10. (Original) The method as claimed in claim 9, wherein the texture maps comprise a Gabor texture orientation map.

11. (Previously Presented) The method as claimed in claim 9, wherein the texture maps comprise an Intensity gradient direction map.

12. (Previously Presented) The method as claimed in claim 9, wherein the texture maps comprise a Markov Random Field texture map.

13. **(Currently Amended)** The method as claimed in claim 9, wherein the method further ~~image processing~~ comprises calculating one or more difference maps between the respective texture maps calculated for the ~~digitised~~ digitized x-ray image and the respective reference texture maps.

14. (Original) The method as claimed in claim 13, wherein the difference maps are classified using one or more classifiers.

15. (Original) The method as claimed in claim 14, wherein the difference maps are classified using Bayesian classifiers.

16. (Previously Presented) The method as claimed in claim 14, wherein the difference maps are classified using Support Vector Machine classifiers.

17. **(Currently Amended)** The method as claimed in claim 1, wherein the ~~image processing~~ method further comprises:

determining a femoral shaft axis in the ~~digitised~~ digitized x-ray image;

determining a femoral neck axis in the ~~digitised~~ digitized x-ray image;

measuring an obtuse angle between the femoral neck axis and the femoral shaft axis; and

detecting the bone fracture based on the measured obtuse angle.

18. **(Currently Amended)** The method as claimed in claim 17, further comprising calculating level lines from respective points on the contour of the bone in the ~~digitised~~ digitized x-ray image and extending normally to the contour to respective other points on the extracted contour.

19. (Original) The method as claimed in claim 18, wherein determining the femoral shaft axis is based on midpoints of the level lines in a shaft portion of the contour of the bone.

20. (Previously Presented) The method as claimed in claim 18, wherein determining the femoral neck axis is based on the level lines in femoral head and neck portion of the contour of the bone.

21. **(Currently Amended)** A system for detection of bone fractures comprising:

means for receiving a ~~digitised~~ digitized x-ray image; ~~and~~

means for processing the ~~digitised~~ digitized x-ray image for detection of bone fractures;

wherein the means for processing the ~~digitised~~ digitized x-ray image ~~utilises an adaptive sampling scheme~~ comprises

means for extracting a contour of a bone in the digitized x-ray image,

means for identifying a bounding box around an area of interest based on the extracted contour of the bone, and

means for applying an adaptive sampling scheme in which the bounding box is divided into a predetermined number of sampling points of a normalized sampling grid such that sampling locations in different images correspond to consistent locations within the area of interest.

22. **(Currently Amended)** A system for detection of bone fractures comprising:

a database for receiving and storing a ~~digitised~~ digitized x-ray image; and

a processor for processing the ~~digitised~~ digitized x-ray image for detection of bone fractures,[[;]] wherein the processor ~~processes the digitised x-ray image utilising an adaptive sampling scheme~~ is configured to:

extract a contour of a bone in the digitized x-ray image;

identify a bounding box around an area of interest based on the extracted contour of the bone; and

apply an adaptive sampling scheme in which the bounding box is divided into a predetermined number of sampling points of a normalized sampling grid such that sampling locations in different images correspond to consistent locations within the area of interest.

23. **(Canceled)**